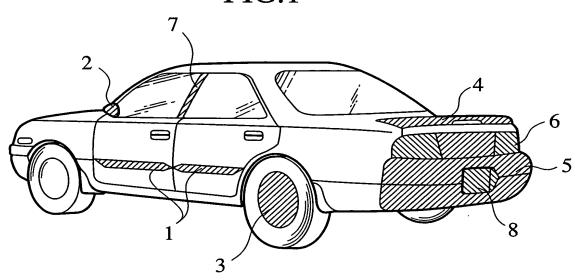
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FIG.2A

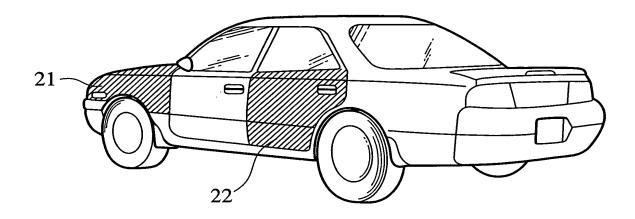


FIG.2B

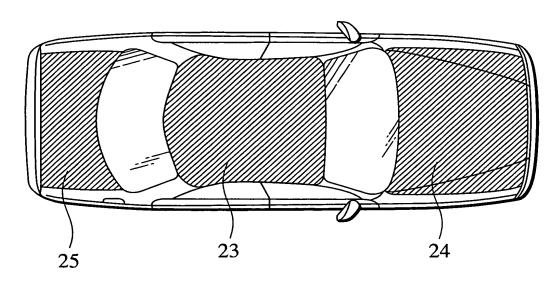


FIG.3

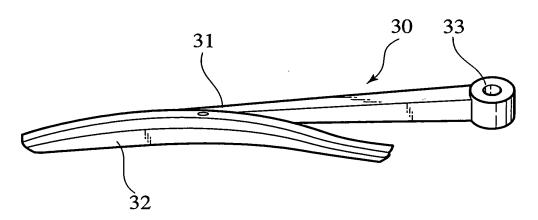
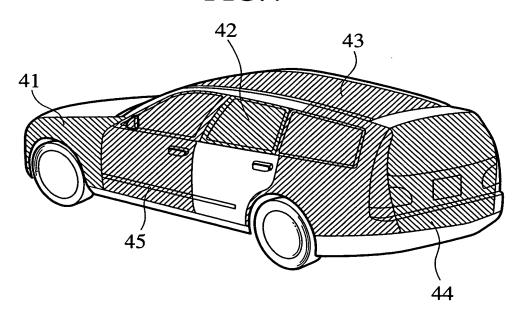


FIG.4



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FIG.5

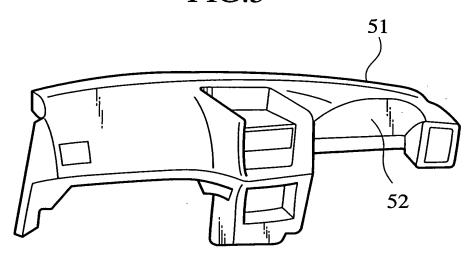
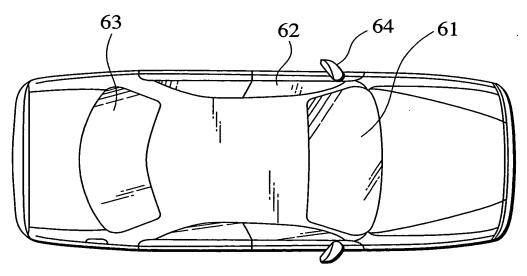


FIG.6



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FIG.7

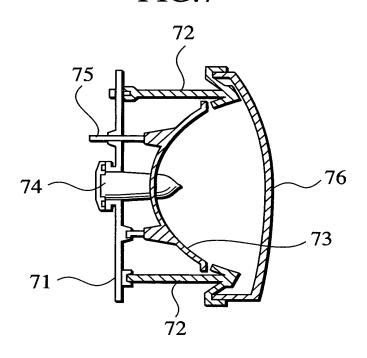
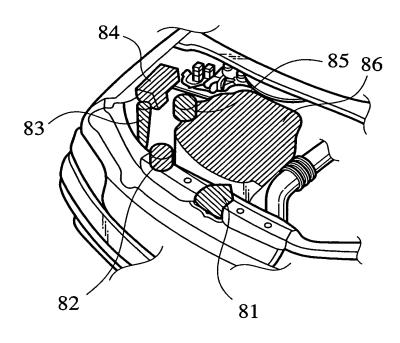
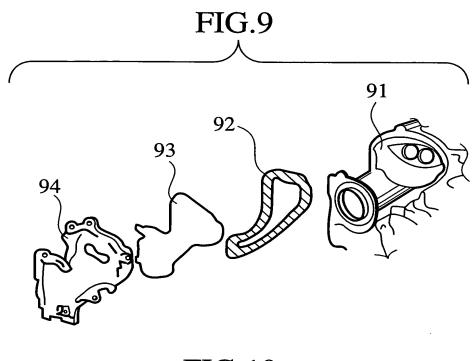
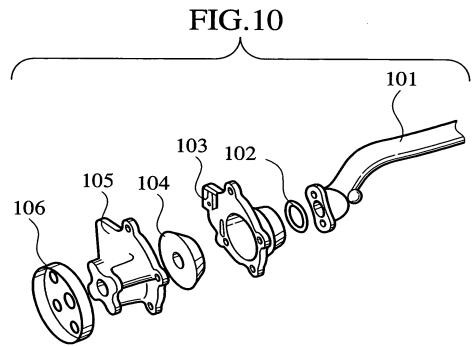


FIG.8

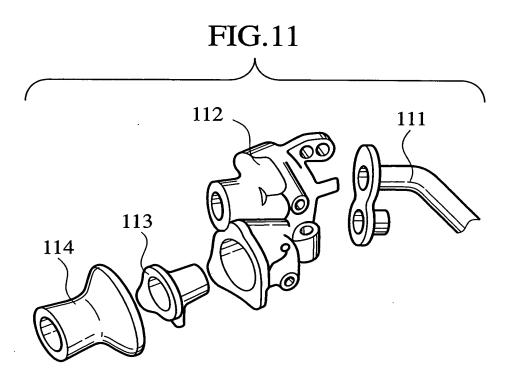


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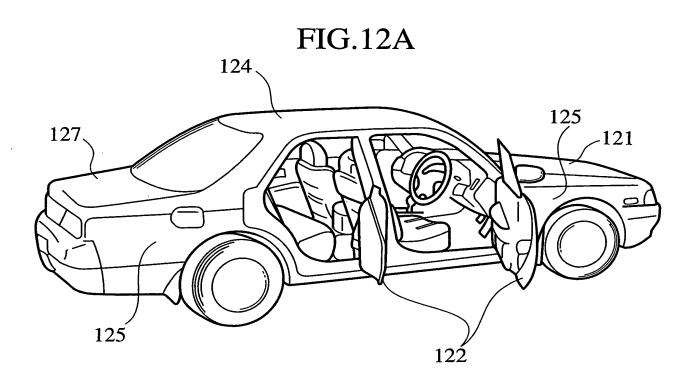


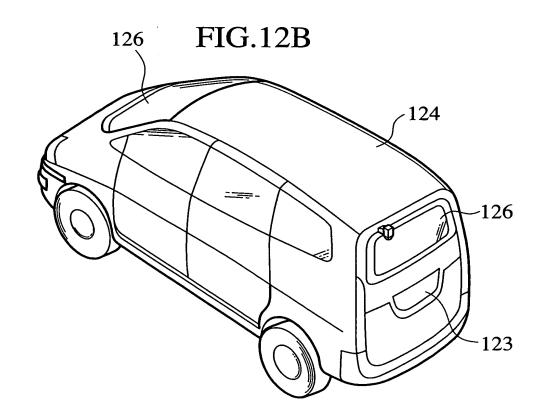
Title: RESIN COMPOSITION, FILLER, AND METHOD OF PRODUCING RESIN COMPOSITION
Inventor(s): Takashi ODA et al.
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METHOD OF PRODUCING RESIN
COMPOSITION
Learner (a) Takashi ODA et al.

Inventor(s): Takashi ODA et al. DOCKET NO.: 040302-0385





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FIG.13A

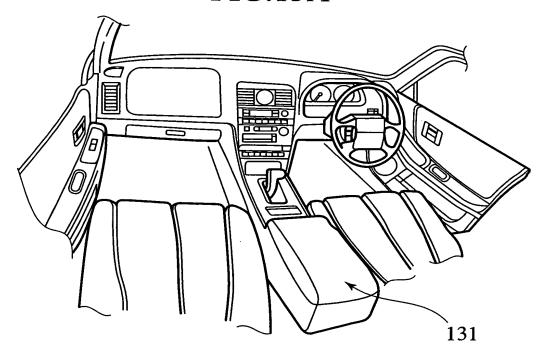
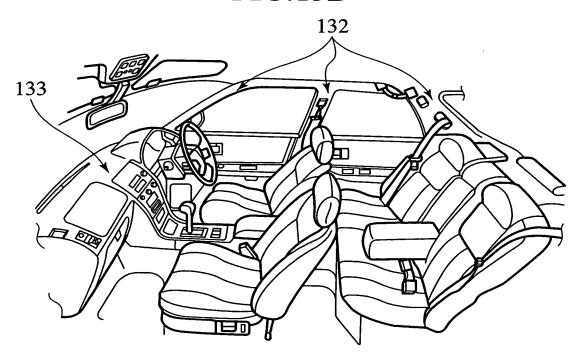
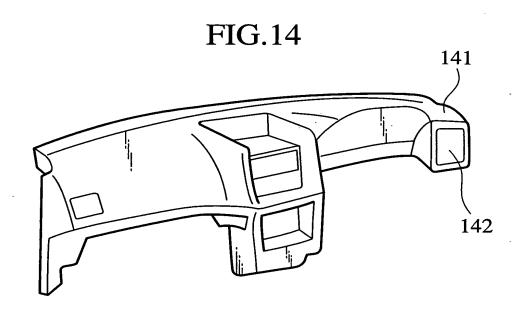


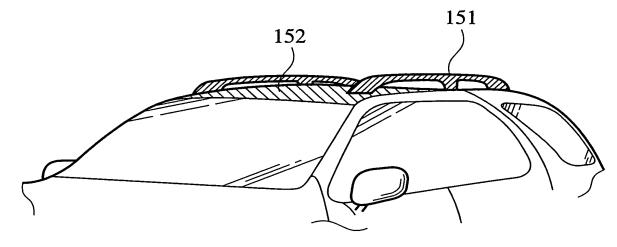
FIG.13B



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FIG.16

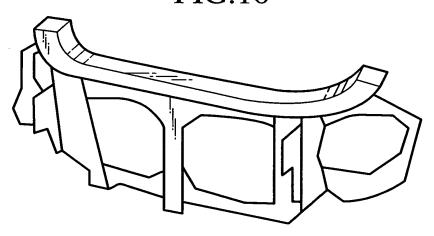
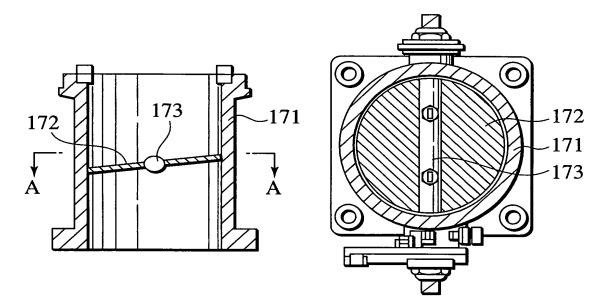
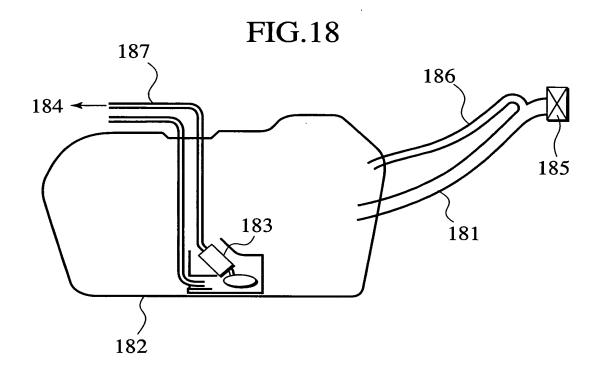


FIG.17A

FIG.17B



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|  | Ex.1- j                                | Ex.1- ji                               | Ex.1-iii                               | Ex.1-jv                                | Ex.1-V                                 | Ex.1-vi                                | COM. Ex.1                              | COM. Ex.2                              |
|--|--|--|--|--|--|--|--|--|
|  | METHYL<br>METHACRYLATE<br>ACRYLIC ACID |
| PARTICLE SIZE OF<br>SILICA(nm)           | 10-20                                  | 10-20                                  | 10-20                                  | 10-20                                  | 10-20                                  | 10-20                                  | 10-20                                  | 10-20                                  |
| FUNCTIONAL GROUP<br>ON SILICA            | ALKYL<br>GROUP<br>AMINO<br>GROUP       | ALKYL<br>GROUP<br>ETHER<br>GROUP       | ALKYL<br>GROUP<br>ESTER<br>GROUP       | ALKYL<br>GROUP<br>NITRO<br>GROUP       | ALKYL<br>GROUP<br>CYANO<br>GROUP       | ALKYI<br>GROUP<br>EPOXY<br>GROUP       | ALKYL                                  | AMINO<br>GROUP                         |
|  | 45                                     | 40                                     | 40                                     | 40                                     | 40                                     | 40                                     | 0                                      | 40                                     |
| HYDROPHOBIC GROUP(%)                     | 50                                     | 50                                     | 20                                     | 50                                     | 50                                     | 20                                     | 50                                     | 0                                      |
| HYDROXYL GROUP(%)                        | 5                                      | 10                                     | 10                                     | 10                                     | 10                                     | 10                                     | 50                                     | 09                                     |
| CONTENTS OF SILICA(%)                    | 30                                     | 30                                     | 30                                     | 30                                     | 30                                     | 30                                     | 30                                     | 30                                     |
| TOTAL LIGHT<br>TRANSMITTANCE(%)          | 91                                     | 92                                     | 93                                     | 93                                     | 06                                     | 91                                     | 06                                     | 84                                     |
|  | EXCELLENT                              |  | EXCELLENT                              |  | G00D                                   |  | G00D                                   |  |
|  |  | EXCELLENT                              | •                                      | EXCELLENT                              |  | EXCELLENT                              |  | AGGREGATED                             |
| BENDING STRENGTH(MPa)                    | 135                                    | 122                                    | 120                                    | 120                                    | 122                                    | 130                                    | .110                                   | 115                                    |
| ELASTIC MODULUS<br>IN BENDING(GPa)       | 4.6                                    | 4.4                                    | 4.4                                    | 4.2                                    | 4.3                                    | 4.5                                    | 3.8                                    | 4                                      |
| COEFFICIENT OF LINEAR<br>EXPANSION(1/°C) | 4.5×10-5                               | 4.5×10-5                               | 4.6×10-5                               | 4.4×10-5                               | 4.5×10-5                               | 4.4×10-5                               | 4.8×10-5                               | 5.0×10-5                               |
|  |  |  |  |  |  |  |  |  |

FIG. 19

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|  |   |   |  |  |  |  |  |   | 즲   |                    |                                   | 2   |
|--|---|---|--|--|--|--|--|---|---|--------------------|-----------------------------------|---|
| İ                                      | 10-20   | AMINO   | 94   | 0  | 09   | 30   | 84   |   | \GGREGA]  | 115                | 4                                 | 5.0×10-   |
| METHYL<br>METHACRYLATE<br>ACRYLIC ACID | 10-20   | ALKYL   | 0  | 50   | 50   | 30   | 06   | G00D  |   | 110                | 3.8                               | 4.8×10-5  |
| METHYL<br>METHACRYLATE<br>ACRYLIC ACID | 10-20   | ALKYL<br>GROUP<br>EPOXY<br>GROUP  | 40   | 20   | 10   | 30   | 93   |   | EXCELLENT   | 130                | 4.5                               | 4.4×10-5  |
| METHYL<br>METHACRYLATE<br>ACRYLIC ACID | 10-20   | ALKYL<br>GROUP<br>CYANO<br>GROUP  | 40   | 50   | 10   | 30   | 06   | G00D  |   | 122                | 4.4                               | 4.5×10-5  |
| METHYL<br>METHACRYLATE<br>ACRYLIC ACID | 10-20   | ALKYL<br>GROUP<br>NITRO<br>GROUP  | 40   | 50   | 10   | 30   | 93   |   | XCELLENT  | 120                | 4.2                               | 4.6×10-5  |
| METHYL<br>METHACRYLATE<br>ACRYLIC ACID | 10-20   | ALKYL<br>GROUP<br>ESTER<br>GROUP  | 40   | 50   | 10   | 30   | 91   | XCELLENT  | I   | 118                | 4.2                               | 4.5×10-5  |
| METHYL<br>METHACRYLATE<br>ACRYLIC ACID | 10-20   | ALKYL<br>GROUP<br>ETHER<br>GROUP  | 40   | 20   | 10   | 30   | 06   |   | XCELLENT  | 120                | 4.4                               | 4.5×10-5  |
| METHYL<br>METHACRYLATE<br>ACRYLIC ACID | 10-20   | ALKYL<br>GROUP<br>AMINO<br>GROUP  | 40   | 50   | 10   | 30   | 06   | XCELLENT  | Н   | 130                | 4.5                               | 4.5×10-5  |
| MONOMER                                | ARTICLE SIZE OF<br>SILICA(nm)   | INCTIONAL GROUP<br>ON SILICA  | OOLAR GROUP(%)   | ROPHOBIC GROUP(%)  | DROXYL GROUP(%)  | TENTS OF SILICA(%)   | TOTAL LIGHT<br>RANSMITTANCE(%)   |   |   | OING STRENGTH(MPa) | LASTIC MODULUS<br>IN BENDING(GPa) | COEFFICIENT OF LINEAR EXPANSION(1/°C)   |
|  | METHYL METHYLATE ACRYLIC ACID  METHYL METHACRYLATE ACRYLIC ACID | METHYL METHACRYLATE ACRYLIC ACID  JO  JO  JO  JO  JO  JO  JO  JO  JO  J | METHYL ACRYLIC ACID  METHACRYLATE ACRYLIC ACID  METHYL ACRYLIC ACID  MET | METHYL ACRYLATE ACRYLIC ACID  METHYL ACRYLIC ACID  METHYL ACRYLATE ACRYLIC ACID  METHYL ACRYL | METHYL ACRYLIC ACID  ACROUP GROUP GR | ACRAITIC ACID  ACRAIT ALKYL  ACRACUP GROUP GROUP  ACRAIT ALKYL  ACRAIT ACID  BETHAR GROUP  B | METHYL ACRYLIC ACID  METHACRYLATE ACROUND GROUND GR | METHYL ACRYLIC ACID  METHYL ACID  METHYL ACID  METHYL ACID  METHYL ACID  METHYL ACID  METHYL | ALKYI | 10-20              | 10-20                             | Coop   Coop |

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|               |                    |                                |                                  | 151            | 1 =                  |                   |                       | 1                               |                 |            |                       |                                    |  |
|---------------|--------------------|--------------------------------|----------------------------------|----------------|----------------------|-------------------|-----------------------|---------------------------------|-----------------|------------|-----------------------|------------------------------------|--|
| COM. Ex.3- ji | POLY-<br>CARBONATE | 10-20                          | AMINO<br>GROUP                   | 15/            | 15                   | 50                | 30                    | 82                              | AGGREGATED      |            | 84                    | 2.5                                | 5.5×10-5                                 |
| COM. Ex.3- i  | POLY-<br>CARBONATE | 10-20                          | ALKYL<br>GROUP                   | 0              | 20                   | 50                | 30                    | 80                              |                 | AGGREGATED | 82                    | 2.4                                | 5.4×10-5                                 |
| Ex.3-vi       | POLY-<br>CARBONATE | 10-20                          | ALKYL<br>GROUP<br>GROUP<br>GROUP | 40             | 50                   | 10                | 30                    | 81                              | G00D            | 1          | 88                    | 2.6                                | 5.1×10-5                                 |
| Ex.3-V        | POLY-<br>CARBONATE | 10-20                          | ALKYL<br>GROUP<br>CYANO<br>GROUP | 40             | 20                   | 10                | 30                    | 82                              | G00D            |            | 98                    | 2.6                                | 5.0×10-5                                 |
| Ex.3-jv       | POLY-<br>CARBONATE | 10-20                          | ALKYL<br>GROUP<br>NITRO<br>GROUP | 40             | 50                   | 10                | 30                    | 83                              | G00D            |            | 68                    | 2.7                                | 4.8×10-5                                 |
| Ex.3-iii      | POLY-<br>CARBONATE | 10-20                          | ALKYL<br>GROUP<br>ESTER<br>GROUP | 40             | 20                   | 10                | 30                    | 81                              | G00D            |            | 88                    | 2.6                                | 5.2×10-5                                 |
| Ex.3- ii      | POLY-<br>CARBONATE | 10-20                          | ALKYL<br>GROUP<br>ETHER<br>GROUP | 40             | 50                   | 10                | 30                    | 82                              | G00D            |            | 68                    | 2.5                                | 5.0×10-5                                 |
| Ex.3- i       | POLY-<br>CARBONATE | 10-20                          | ALKYI<br>GROUP<br>AMINO<br>GROUP | 40             | 50                   | 10                | 30                    | 84                              | EXCELLENT       |            | 91                    | 2.6                                | 4.8×10-5                                 |
| 170:011       | MONOMER            | PARTICLE SIZE OF<br>SILICA(nm) | FUNCTIONAL GROUP<br>ON SILICA    | POLAR GROUP(%) | HYDROPHOBIC GROUP(%) | HYDROXYL GROUP(%) | CONTENTS OF SILICA(%) | TOTAL LIGHT<br>TRANSMITTANCE(%) | DISPERSED STATE |            | BENDING STRENGTH(MPa) | ELASTIC MODULUS<br>IN BENDING(GPa) | COEFFICIENT OF LINEAR<br>EXPANSION(1/°C) |